DOCUMENT RESUME

ED 135 866 TM 006 097

AUTHOR Sirois, Herman A.; Gable, Robert K.
TITLE A Factor-Analytic Validity Study of the Blumberg-Amidon "Teacher Perceptions of Supervisor-Teacher Conferences" Instrument.
PUB DATE [Apr 77]
NOTE 20p.; Paper presented at the Annual Meeting of the American Educational Research Association (61st, New York, New York, April 4-8, 1977)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Behavior Rating Scales; Conferences; *Factor Analysis; Scoring; Supervisors; Teacher Administrator Relationship; Teacher Attitudes; *Teacher Supervision; *Test Reliability; *Test Validity
IDENTIFIERS *Teacher Perceptions of Supervisory Conferences

ABSTRACT

An instrument, developed in 1965 by Arthur Blumberg and Edmund Amidon to measure teacher perceptions of supervisory conferences, has presented problems of reliability to researchers. The problem has stemmed from the lack of a valid and reliable scoring method for the instrument. The instrument was administered to 31 in-service teachers, Grades K-12, randomly selected from a larger group involved in a program of supervision. The data were subjected to factor analysis and subsequent alpha internal reliability estimates. It was found that the Blumberg-Amidon instrument is a two-factor or two-scale measure which may also be interpreted as a one-scale measure, each with a high degree of reliability. The instrument is important and valuable to the study of educational supervision and its optional scoring methods render it extremely flexible over a wide range of research interests and needs. The instrument is included. (Author/MV)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED135866

A Factor-Analytic Validity Study of the Blumberg-Amidon "Teacher Perceptions of Supervisor-Teacher Conferences" Instrument (VAR)

HERMAN A. SIROIS ROBERT K. GABLE

University of Connecticut

ABSTRACT

Problem. An instrument, developed in 1965 by Arthur Blumberg and Edmund Amidon to measure teacher perceptions of supervisory conferences, has presented problems of reliability to researchers. The problem has stemmed from the lack of a valid and reliable scoring method for the instrument.

Methodology. The instrument was administered to thirty-one inservice teachers, grades K-12, randomly selected from a larger group involved in a program of supervision. The data were subjected to factor analysis and subsequent alpha internal reliability estimates.

Results. It was found that the Blumberg-Amidon instrument is a two-factor or two-scale measure which may also be interpreted as a one-scale measure, each with a high degree of reliability.

Conclusions. It is concluded that the instrument is important and valuable to the study of educational supervision and that its optional scoring methods render it extremely flexible over a wide range of research interests and needs.

TM006 092

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED135866

A Factor-Analytic Validity Study of the Blumberg-Amidon "Teacher Perceptions of Supervisor-Teacher Conferences" Instrument

Herman A. Sirois · Robert K. Gable
University of Connecticut

TM006 097

AERA, 1977 Session # 20.06

A Factor-Analytic Validity Study of the Blumberg-Amidon "Teacher Perceptions of Supervisor-Teacher Conferences" Instrument

Herman A. Sirois Robert K. Gable
University of Connecticut

The effectiveness of supervisory conference in education and the identification of significant supervisor-teacher correlates associated with such effectiveness have been the subject of a growing amount of research in the last decade (Blumberg & Amidon, 1965; Blumberg & others, 1968, 1970; Weller, 1971; Barber, 1972; others). One of the persistent obstacles to such research has been the lack of reliable instruments with which to measure the effectiveness of supervisory conferences and/or the nature of the supervisor-teacher independent variables.

In a 1965 publication, Arthur Blumberg and Edmund Amidon tackled both of these problems, that is, the measurement of both the dependent and independent variables related to supervisory conferences in education (Blumberg & Amidon, 1965). At that time, they offered a two part instrument, the first part of which sought to determine the nature of the supervisor's behavior (the proposed independent variable) as directive or non-directive a la Carl

Rogers (1961).

The second part of this instrument, which is the subject of the present analysis, sought to determine the effectiveness of supervisory conferences as perceived by the teacher. This scale, which Blumberg, Amidon, and others have used as a criterion measure in several studies, consists of twelve stems and is reproduce in Figure 1 (from Blumberg & Amidon, 1965).

- - - - - - - - - -
Insert Figure 1
- - - - - - - - - -

Most of the items in this scale were derived by Blumberg and Amidon from Gibb's (1961) work on defensive communication, while other items "about the nature of a teacher's learning from supervision and an item on the teacher's general feelings about the productivity of his interaction with his supervisor were also included (Blumberg, 1974, p. 45)."

In presenting this instrument, Blumberg & Amidon (1965) failed to cite or establish its reliability, nor, to the best of our knowledge, has such reliability been subsequently established. The authors (Blumberg & Amidon, 1965) proceed in this and subsequent studies (e.g. Blumberg, 1974) with the questionable procedure of analyzing the data on the basis of each separate stem or by intuitive clusters of these stems.

Research based on such procedures is, of course, subject to question. Moreover, the lack of established reliability for an otherwise promising instrument can present problems for researchers who seek to analyze the constructs underlying such a scale. A further problem, closely related to that of reliability, has been the lack of directions for scoring the instrument. It is these concerns which precipitated the present validation study.

Methodology

The Blumberg-Amidon "Teacher Perceptions of Supervisory Conferences" instrument, part two (see Figure 1), was administered to 31 in-service teachers, grades K-12, in a small Connecticut city with a student population of about 10,000. These teachers were selected randomly and represented varying degrees of involvement in a systematic program of teacher supervision.[1]

The subjects were asked to describe the supervisory conferences they had had with their supervisors on a scale of one (1=low) to five (5=high) for each of the twelve stems. The resulting data were subjected to factor analysis to determine appropriate factor loadings and also to determine the proper scoring procedures (if any) for the scale(s). An alpha internal reliability analysis was performed to determine the reliability of the resultant scale(s).

Results

The means and standard deviations of the sample for each stem are reported in Table 1.

- - - - - - - - - -
Insert Table 1
- - - - - - - - - -

The incomplete components loading matrix of the factor analysis revealed three factors for the data. Table 2 reports the intercorrelations of the primary axes of the three factors resulting from the analysis.

- - - - - - - - - -
Insert Table 2
- - - - - - - - - -

Table 2 reveals that factors one and two are highly related to each other (.71) and, therefore, are not orthogonal. Consequently, it was decided that the obliquimax rotation of factors would be used for any further analyses. Table 3 presents the obliquimax factor loadings of each of the three factors for each of the twelve stems.

- - - - - - - - - -
Insert Table 3
- - - - - - - - - -

Inspection of the factor loadings reported in Table 3 reveal two factors which underlie the Blumberg-Amidon instrument. Loadings on factor one include stems 1, 4, 5, 6, and 7; while factor two loadings include stems 2, 3, 8, 9, 10, and 12. Stem eleven is isolated on factor three.

Before turning to testing the reliability of these two factors, we recall from Table 2 that factors one and two

are highly related to each other (.71). This presents us with an interesting dilemma, namely, a two-scale instrument which may possibly be interpreted as a one-scale instrument.

With this possibility in mind, it was decided to test for reliability in two ways: first, to test for the reliability of each of the two scales (factors) with stems entered appropriately on each scale; and second, to test for the reliability of a one scale instrument with stems from factors one and two combined. The results of these alpha internal reliability analyses are reported in the right hand column of Table 4.

Naming and Scoring the Scales

Table 4 confirms our suspicion that the Blumberg-Amidon instrument may be scored and interpreted in at least two ways: as a two-scale instrument and/or as a one-scale instrument. Such interpretations, of course, are dependent upon the constructs which underlie the instrument and its scales and the research interests of the users.

Scale R of the instrument, which we have named "Relationships", consists of stems 1, 4, 5, 6, and 7 of factor one. Scale R appears to be based on the constructs of the interpersonal climate of the supervisory conferences and of the teacher's relationship with the supervisor.

Scale P of the instrument, which we have named "Productivity", consists of stems 2, 3, 8, 9, 10, and 12 of factor two, and appears to have as its underlying constructs the teacher's perception of the learning and productivity resulting from supervisory conferences. Table 4 itemizes the stems associated with each scale. The reliability of scale R is estimated at .91, while scale P is estimated for reliability at .88.

- - - - - - - - - -
Insert Table 4
- - - - - - - - - -

As a one-scale instrument, with scales R and P combined, a reliability of .92 is estimated for the Blumberg-Amidon instrument. All stems, with the exclusion of number eleven, are included when scoring this instrument as a one-scale measure.

Scoring data in relation to these scales is simple. A subject's ratings on the stems associated with the scale(s) under consideration (scale R, or P, or R plus P if the one-scale method is used) are simply totaled to yield a score which may be compared to other subjects. The only precaution is that stems 4, 5, 6, 7, 9, and 12 must be reverse scored prior to such totaling.

The researcher's interests and hypotheses should, of course, direct the choice of scales and their use in any

situation. The potential for using this instrument as a two-scale or one-scale measure is not merely an exercise in statistical semantics. If, for example, as a result of training and implementation of a certain program of teacher supervision, it is hypothesized that supervisor-teacher relationships may change, then scale R from the two-scale "version" of this instrument could appropriatley be utilized. If, in addition, it is hypothesized that teachers' perceptions of the productivity of supervision will change as a result of the treatment suggested above, then both the R and P scales of the two-scale version would apply as two separate criterion measures.

If, on the other hand, hypotheses cannot be so specifically stated, or change is hypothesized to occur in a less than systematic manner (cf above), or if the general nature of the supervisory relationship and its effectiveness (at least as perceived by teachers) is required as an independent variable, then the use of the Blumberg-Amidon instrument as a one-scale measure may be advised.

Conclusions

Based on the present analysis, it is clear that Blumberg and Amidon (1965) have developed an instrument that can be valuable in the study of educational supervision.

What is equally clear, however, is that this instrument has not been adequately analyzed, and that any conclusions based on its use (at least to date) are questionable.

The problem has stemmed from the lack of a valid and reliable scoring method for the instrument; a problem which this report seeks to remediate. The method employed was a factor analysis of the instrument and subsequent alpha internal reliability estimates of resulting factors.

It was found that the Blumberg-Amidon "Teacher Perceptions of Supervisory Conferences" instrument is a two-factor or two-scale measure which may also be interpreted as a one-scale measure, each with a high degree of reliability. It is also concluded that such optional scoring methods for this instrument render it extremely flexible and valuable over a wide range of research interests and needs.

Finally, researchers are advised to make use of the Blumberg-Amidon instrument with confidence in its reliability if the scoring procedures outlined herein are followed. The instrument, in its brevity, achieves a degree of parsimony not often found in instruments of this type. It contains only twelve stems and scoring is relatively simple. Further, the constructs underlying the instrument are clear, significant, and practical in terms of the realities of the practice of educational supervision.

Figure 1

Blumberg-Amidon "Teacher Perceptions of Supervisor-Teacher Conferences"

1.	Teacher's freedom to initiate discussion.	1	2	3	4	5
2.	Learning about one's behavior as a teacher.	1	2	3	4	5
3.	Learning about oneself as a person.	1	2	3	4	5
4.	Supervisor's perceived need to control.	1	2	3	4	5
5.	(Strategy) Teacher's felt need to plan his behavior to avoid certain areas of discussion.	1	2	3	4	5
6.	Supervisor's perceived attitude of superiority.	1	2	3	4	5
7.	(Certaintly) Perceived tendency of supervisor to assume he has the right answers.	1	2	3	4	5
8.	Perceived empathy by the supervisor.	1	2	3	4	5
9.	Feeling of being evaluated by the supervisor.	1	2	3	4	5
10.	Perceptions of productivity by supervisory conferences.	1	2	3	4	5
11.	Perceived amount of supervisor talk.	1	2	3	4	5
12.	Discrepancy between perceived and "wished for" supervisor behavior.	1	2	3	4	5
		low				high

Table 1

Means and Standard Deviations of the Sample for Each Stem of the Blumberg-Amidon Instrument

STEM	MEAN	STAN. DEV.
1	4.23	0.88
2	3.65	1.33
3	2.90	1.14
4	2.32	1.30
5	1.97	1.20
6	1.87	1.02
7	2.23	1.15
8	3.55	1.12
9	2.61	1.20
10	3.74	1.24
11	3.45	0.77
12	2.61	1.45

N = 31

Table 2

Intercorrelation of Primary Axes

	1	2	3
1	1.00	0.71	-0.34
2		1.00	-0.24
3			1.00

Table 3

Obliquimax Factor Loadings Matrix

	1	2	3
1	69	--	--
2	--	92	--
3	--	86	--
4	-98	--	--
5	-104	--	--
6	-72	--	--
7	-98	--	--
8	--	65	--
9	60	-88	53
10	--	71	--
11	--	--	89
12	--	-84	--

Note: the original matrix was rounded to two places and multiplied by 100 for this table; only values over 40 are reported.

Table 4

Reliability Estimates and Scoring Procedures for the Scales of the Blumberg-Amidon "Teacher Perceptions of Supervisory Conferences" Instrument

	Alpha Reliability Estimate
I. As a two-scale instrument:	
A. Scale R, Relationships (Factor One)	.91
1. Teacher's freedom to initiate discussion.	
*4. Supervisor's perceived need to control.	
*5. (Strategy) Teacher's felt need to plan his behavior to avoid certain areas of discussion.	
*6. Supervisor's perceived attitude of superiority.	
*7. (Certainty) Perceived tendency of supervisor to assume he has the right answers.	
B. Scale P, Productivity (Factor Two)	.88
2. Learning about one's behavior as a teacher.	
3. Learning about oneself as a person.	
8. Perceived empathy by the supervisor.	
*9. Feeling of being evaluated by the supervisor.	
10. Perceptions of productivity by supervisory conferences.	
*12. Discrepancy between perceived and "wished for" supervisor behavior.	
II. As a one-scale instrument:	
(Factors One and Two combined) Productivity and Relationships of Supervisory Conferences	.92
(Include all stems except number eleven.)	

*Reverse score these stems.

References

Barber, Raymond W. A systhesis of research concerning helping behavior and its implications for instructional supervision (Doctoral dissertation, Florida State University, 1972) Ann Arbor, Mich.: University Microfilms, No. 75-5543.

Blumberg, Arthur. Supervisors and Teachers. Berkeley, Calif.: McCutchan, 1974.

Blumberg, Arthur, & Edmund Amidon. Teacher perceptions of supervisor-teacher interaction. Administrator's Notebook, 1965, 14, 1, 1-4.

Blumberg, Arthur, & Philip Cusick. Supervisor-teacher interaction: an analysis of verbal behavior. Education, 1970, 91, 2, 126-34.

Blumberg, Arthur, & W. Weber. Teacher morale as a function of perceived supervisor behavior style. Journal of Educational Research, 1968, 62, 3, 109-13.

Gibb, J. Defensive communication. Journal of Communication, 1961, 11, 3, 141-148.

Rogers, Carl R. On Becoming a Person. Boston: Houghton Mifflin, 1961.

Weller, Richard H. Verbal Communication in Instructional Supervision. New York: Teachers College Press, 1971.

Reference Notes

1. Establishing the extent to which supervision has actually occurred (if not as a continuous variable, at least categorically) is most important, and often overlooked. As Weller (1971, pp. 29-30) points out, the problem of insignificant results which seems to plauge research in educational supervision may be largely due to the failure of researchers to determine the extent to which (if at all) a particular model of supervision has actually been implemented or adhered to during a particular study. In test construction, this caution seems to suffer even greater violations, if not complete disregard. There seems to exist the assumption that all public school teachers receive or are involved in supervisory conferences with their supervisors, and can, therefore, reliably describe the nature of the supervisory process. The development of research instruments based on this assumption is obviously ill-advised but not uncommon. The present study did not make this assumption.

A Factor-Analytic Validity Study of the Blumberg-Amidon "Teacher Perceptions of Supervisor-Teacher Conferences" Instrument

Herman A. Sirois
Robert K. Gable
University of Connecticut

Herman A. Sirois
Department of Educational Administration
School of Education, U-32
University of Connecticut
Storrs, Connecticut 06268

SUMMARY

Problem

The problem of teacher supervision, although long neglected in educational research, is becoming increasingly important as demands for educational accountability and consequent state and locally mandated teacher evaluation programs increase. The effectiveness of supervisory conferences in education and the identification of significant supervisor-teacher correlates associated with such effectiveness have been the subject of a growing amount of research in the last decade (Blumberg & Amidon, 1965; Blumberg & others, 1968, 1970; Weller, 1971; Barber, 1972; others). One of the persistent obstacles to such research has been the lack of reliable instruments with which to measure either the effectiveness of supervisory conferences and/or the nature of the supervisor-teacher independent variables.

In a 1965 publication, Arthur Blumberg and Edmund Amidon tackled both of these problems, offering researchers a two part instrument, the first part of which sought to measure certain supervisor behaviors as an independent variable, while the second part of this instrument (the subject of the present analysis) sought to determine the effectiveness of supervisory conferences (the suggested dependent variable) as perceived by the teacher (Blumberg & Amidon, 1965).

In presenting this instrument, Blumberg and Amidon (1965) failed to cite or establish its reliability, nor, to the best of our knowledge, has such reliability been subsequently established. The present study seeks to establish such reliability and to present directions for scoring the instrument.

Methodology

Instrumentation, Sample. The Blumberg-Amidon "Teacher Perceptions of Supervisory Conferences" instrument (part two, Blumberg & Amidon, 1965) was administered to 31 in-service teachers, grades K-12. These teachers were selected randomly and represented varying degrees of involvement in a systematic program of teacher supervision.

Analysis. The subjects were asked to describe the supervisory conferences they had had with their supervisors using the twelve stems of the Blumberg-Amidon instrument. The resulting data were subjected to factor analysis to determine appropriate factor loadings and also to determine the proper scoring procedures (if any) for the scale(s). An alpha-internal reliability analysis was performed to determine the reliability of each of the resultant scales.

Results

The rotated factor loadings (obliquimax) revealed that the Blumberg-Amidon instrument consists of two factors or scales. Factor one, which we have named "Relationships," deals with the teacher's perceptions of the interpersonal relationships between the teacher and the supervisor. Factor two, which we have named "Productivity," deals with the teacher's perceptions of the learning and usefulness resulting from the supervisory conferences. These two factors should be named Scale R and Scale P, respectively. Scale R

is estimated for reliability at .91, while the reliability of Scale P is estimated at .88.

The two scales, further, are highly correlated to each other (at .71). Thus, it is possible to consider the instrument as a one-scale instrument. As a one-scale test, the Blumberg-Amidon instrument would be a measure of the productive relationships of supervisory conferences as perceived by teachers. As a one-scale instrument, with scales R and P combined, a reliability of .92 is estimated.

Conclusions

The researcher's interest and hypothesis should, of course, direct the choice of scales and their use in any situation. The potential for using this instrument as a two-scale or one-scale measure is not merely an exercise in statistical semantics. If, for example, as a result of training in an implementation of a certain program of teacher supervision, it is hypothesized that the supervisor-teacher relationships may change, then Scale R from the two-scale version of this instrument could appropriately be utilized. Likewise, the P scale may be utilized to test the hypothesis that teacher perceptions of productivity of supervisory conferences may change as a result of the treatment suggested above.

If, on the other hand, hypotheses cannot be so specifically stated, or change is hypothesized to occur in a less than systematic manner (of above), or if the general nature of the supervisory relationship and its effectiveness is required as an independent variable, then the use of the Blumberg-Amidon instrument as a one-scale measure is advised.

Researchers are advised to make use of the instrument with confidence in its reliability (when scored as per directions). The instrument, in its brevity, achieves a degree of parsimony not often found in instruments of this type. It contains only twelve stems and scoring is relatively simple. Finally, the constructs underlying the instrument are clear, significant, and practical in terms of the realities of educational supervision.